



SPEC® MPIM2007 Result

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SGI

SGI Altix ICE 8200EX
(Intel Xeon X5570, 2.93 GHz, PMPI 5.6.6)

SPECmpiM_peak2007 = Not Run

SPECmpiM_base2007 = NC

MPI2007 license: 021

Test sponsor: Platform Computing Inc.

Tested by: Platform Computing Inc.

Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Feb-2009

	Ranks
104.milc	
107.leslie3d	
113.GemsFDTD	
115.fds4	
121.pop2	
122.tachyon	
126.lammps	
127.wrf2	
128.GAPgeofem	
129.tera_tf	
130.soc	
132.zeusmp2	
137.lu	

Non-Compliant

Results Table

Benchmark	Base							Peak						
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
104.milc	64	NC	NC	NC	NC	NC	NC							
107.leslie3d	64	NC	NC	NC	NC	NC	NC							

Table continues on next page. Results appear in the order in which they were run. Bold underlined text indicates a median measurement.



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Results Table (Continued)

Benchmark	Base								Peak							
	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Ranks	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
113.GemsFDTD	64	NC	NC	NC	NC	NC	NC									
115.fds4	64	NC	NC	NC	NC	NC	NC									
121.pop2	64	NC	NC	NC	NC	NC	NC									
122.tachyon	64	NC	NC	NC	NC	NC	NC									
126.lammps	64	NC	NC	NC	NC	NC	NC									
127.wrf2	64	NC	NC	NC	NC	NC	NC									
128.GAPgeofem	64	NC	NC	NC	NC	NC	NC									
129.tera_tf	64	NC	NC	NC	NC	NC	NC									
130.socorro	64	NC	NC	NC	NC	NC	NC									
132.zeusmp2	64	NC	NC	NC	NC	NC	NC									
137.lu	64	NC	NC	NC	NC	NC	NC									

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Hardware Summary

Type of System: Homogeneous
 Compute Node: SGI Altix ICE 8200EX Compute Node
 Interconnect: InfiniBand (MPI)
 InfiniBand (I/O)
 File Server Node: SGI InfiniteStorage Nexis 2000 NAS
 Total Compute Nodes: 4
 Total MPI Ranks: 8
 Total Cores: 32
 Total Threads: 64
 Total Memory: 192 GB
 Base Ranks Run: 64
 Minimum Peak Ranks: --
 Maximum Peak Ranks: --

Software Summary

C Compiler: Intel C Compiler for Linux
 Version 10.1, Build 20080801
 C++ Compiler: Intel C++ Compiler for Linux
 Version 10.1, Build 20080801
 Fortran Compiler: Intel Fortran Compiler for Linux
 Version 10.1, Build 20080801
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 MPI Library: Platform MPI 5.6.6-59413
 Other MPI Info: OFED 1.3.1
 Platform Computing Inc has acquired
 Scali MPI Connect, hence Platform MPI
 and Scali MPI Connect are used synonymously.
 Pre-processors: None
 Other Software: None



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Node Description: SGI Altix ICE 8200EX Compute Node

Hardware		Software	
Number of nodes:	4	Adapter:	Mellanox MT26418 ConnectX IB DDR (PCIe x8 Gen2 5 GT/s)
Uses of the node:	compute	Adapter Driver:	OFED-1.3.1
Vendor:	SGI	Adapter Firmware:	2.5.0
Model:	SGI Altix ICE 8200EX (Intel Xeon X5570, 2.93 GHz)	Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP2 Kernel 2.6.16.60-0.30-smp
CPU Name:	Intel Xeon X5570	Local File System:	NFSv3
CPU(s) orderable:	1-2 chips	Shared File System:	NFSv3 IPoIB
Chips enabled:	2	System State:	Multi-user, run level 3
Cores enabled:	8	Other Software:	SGI ProPack 6 for Linux Service Pack 2
Cores per chip:	4		
Threads per core:	2		
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz, 6.4 GT/s QPI, Hyper-Threading enabled		
CPU MHz:	2934		
Primary Cache:	32 KB I + 32 KB D on chip per core		
Secondary Cache:	256 KB I+D on chip per core		
L3 Cache:	8 MB I+D on chip per chip		
Other Cache:	None		
Memory:	48 GB (12x4GB DDR3 1066 CL7 RDIMMs)		
Disk Subsystem:	None		
Other Hardware:	None		
Adapter:	Mellanox MT26418 ConnectX IB DDR (PCIe x8 Gen2 5 GT/s)		
Number of Adapters:	1		
Slot Type:	PCIe x8 Gen2		
Data Rate:	InfiniBand 4x DDR		
Ports Used:	2		
Interconnect:	InfiniBand		

Node Description: SGI InfiniteStorage Nexis 2000 NAS

Hardware		Software	
Number of nodes:	1	Adapter:	Mellanox MT25208 InfiniHost III Ex (PCIe x8 Gen1 2.5 GT/s)
Uses of the node:	fileserver	Adapter Driver:	OFED-1.3
Vendor:	SGI	Adapter Firmware:	5.3.0
Model:	SGI Altix XE 240 (Intel Xeon 5140, 2.33 GHz)		

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Software Availability: Feb-2009

Node Description: SGI InfiniteStorage Nexis 7000 NAS

CPU Name: Intel Xeon 5140
 CPU(s) orderable: 1-2 chips
 Chips enabled: 2
 Cores enabled: 4
 Cores per chip: 2
 Threads per core: 1
 CPU Characteristics: 1333 MHz FSB
 CPU MHz: 2328
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 4 MB I+D on chip per chip
 L3 Cache: None
 Other Cache: None
 Memory: 24 GB (6*4GB DDR2 1066 DIMMs)
 Disk Subsystem: 7 TB RAID 5
 48 x 147 GB SAS (Seagate Cheetah 15000 rpm)
 Other Hardware: None
 Adapter: Mellanox MT2520 InfiniHost III Ex
 (PCIe x8 Gen2 2.5 GT/s)
 Number of Adapters: 2
 Slot Type: PCIe x8 Gen1
 Data Rate: InfiniBand 4x DDR
 Ports Used: 2
 Interconnect Type: InfiniBand

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP1
 Kernel 2.6.16.54-0.2.5-smp
 Local File System: xfs
 Shared File System: --
 System State: Multi-user, run level 3
 Other Software: SGI ProPack 5 for Linux Service Pack 5

Interconnect Description: InfiniBand (MPI)

Hardware
 Vendor: Mellanox Technologies
 Model: MT26418 ConnectX
 Switch Model: Mellanox MT47396 InfiniScale III
 Number of Switches: 8
 Number of Ports: 24
 Data Rate: InfiniBand 4x DDR
 Firmware: 2020001
 Topology: Bristle hypercube with express links
 Primary Use: MPI traffic

Software



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Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Feb-2009

Interconnect Description: InfiniBand (QO)

Hardware

Vendor: Mellanox Technologies
 Model: MT26418 ConnectX
 Switch Model: Mellanox MT47396 InfiniScale-III
 Number of Switches: 8
 Number of Ports: 24
 Data Rate: InfiniBand 4x DDR
 Firmware: 2020001
 Topology: Bristle hypercube with express links
 Primary Use: I/O traffic

Software

Submit Notes

The config file option 'submit' was used.

General Notes

Software environment:
 limit stacksize unlimited
 Removes limits on the maximum size of the automatically-extended stack region of the current process and each process it creates.
 PBS Pro batch scheduler (www.altair.com) is used with
 queues to ensure each MPI job is assigned to
 a topologically compact set of nodes
 BIOS settings:
 AMI BIOS version 8.15
 Hyper-Threading Technology enabled (default)
 Intel Turbo Boost Technology enabled (default)
 Intel Turbo Boost Technology activated in the OS via
 /etc/init.d/acpid start
 /etc/init.d/powersaved start
 powersave -f



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Base Compiler Invocation

C benchmarks:

mpicc -ccl icc

C++ benchmarks:

126.lammps: mpicc -ccl icpc

Fortran benchmarks:

mpif77 -ccl ifort

Benchmarks using both Fortran and C:

mpicc -ccl icc mpif77 -ccl ifort

Base Portability Flags

121.pop2: -DSPEC_MPI_CASE_FLAG

127.wf2: -DSPEC_MPI_CASE_FLAG -DSPEC_MPI_LINUX

Base Optimization Flags

C benchmarks:

-O3 -ipo -xT -no-prec-div

C++ benchmarks:

126.lammps: -O3 -ipo -xT -no-prec-div -ansi-alias

Fortran benchmarks:

-O3 -ipo -xT -no-prec-div

Benchmarks using both Fortran and C:

-O3 -ipo -xT -no-prec-div



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The flags files that were used to format this result can be browsed at

http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.html

http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.html

You can also download the XML flags sources by using the following links:

http://www.spec.org/mpi2007/flags/MPI2007_flags.20081204.xml

http://www.spec.org/mpi2007/flags/EM64T_Intel101_flags.20080618.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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